

Package ‘disagg2’

February 24, 2025

Type Package

Title Support Functions for Time Series Analysis Book

Version 0.1.0

Description Contains the support functions for the Time Series Analysis book.

We present a function to calculate MSE and MAE for inputs of actual and forecast values. We also have the code for disaggregation as found in Wei and Stram (1990, <[doi:10.1111/j.2517-6161.1990.tb01799.x](https://doi.org/10.1111/j.2517-6161.1990.tb01799.x)>), and Hodgess and Wei (1996, ``Temporal Disaggregation of Time Series").

Depends R (>= 4.4.0), PolynomF

License GPL-2 | GPL-3

Encoding UTF-8

RoxygenNote 7.3.1

NeedsCompilation no

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Repository CRAN

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disag1	<i>Create a disaggregated time series</i>
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Description

Input an annual, quarterly series. Create a quarterly or monthly series via ARIMA

Usage

```
disag1(x, m)
```

Arguments

x	Input ts, must have frequency of 1 or 4
m	Order of disaggregation, must be 12, 4, or 3

Details

Uses ARIMA model on the aggregate series to create a disaggregate series

Value

y_s	Disag. series to be summed
y_m	Disag. series mean
disphi	Disagg phi value
distheta	Disagg theta value
dissig2	Disagg sigma2

References

William W.S. Wei and Daniel Stram, 1990, Disaggregation of Time Series Models, Journal of the Royal Statistics Society, B, Vol 52, Number 3, pp. 453-467. Erin M. Hodgess and William W.S. Wei, 1996, Temporal Disaggregation of Time Series, Applied Statistical Science I, pp. 33-43, Nova Science Publishers, Commack, NY

foremeas1	<i>Calculate MSE and MAE for actual and forecast values</i>
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Description

The inputs are the actual and the forecast values. We calculate the Mean Square Error (MSE) and Mean Absolute Error (MAE)

Usage

```
foremeas1(actx, forex)
```

Arguments

actx	actual values
forex	forecast values

Details

$MSE = \text{mean}((\text{act}-\text{fore})^2)$, $MAE = \text{mean}(\text{abs}(\text{act}-\text{fore}))$

Value

MSE	Mean square error
MAE	Mean absolute error

Author(s)

```
c( person( "Erin", "Hodgess", email = "erinm.hodgess@gmail.com", role = c("aut", "cre") ) )
```

mySym	<i>Create an nxn symmetric matrix from an n length vector</i>
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Description

Create an nxn symmetric matrix from an n length vector

Usage

```
mySym(x)
```

Arguments

x	input length n vector
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Details

create an nxn symmetric matrix

Value

y symmetric matrix

Author(s)

c(person("Erin", "Hodgess", email = "erinm.hodgess@gmail.com", role = c("aut", "cre")))

Examples

```
##---- Should be DIRECTLY executable !! ----  
##-- ==> Define data, use random,  
##--or standard data sets, see data().  
mySym(1:6)
```

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